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ANALYSIS OF "IN-DEPTH" SCHOOLS CONDUCTED BY AREA EXTENSION AGENTS.

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FIVE EDUCATIONAL PROGRAMS WERE CONDUCTED DURING THE FALL AND WINTER OF 1965-66 AT AREA EXTENSION CENTERS ESTABLISHED BY THE OHIO COOPERATIVE EXTENSION SERVICE IN JANUARY 1965. AIMING MAINLY AT THE COMMERCIAL AGRICULTURAL INDUSTRY, SPECIALIZED EXTENSION AGENTS FOCUSED ON EDUCATIONAL PROBLEMS OF AGRICULTURAL PRODUCTION AND OF SUCH AGRIBUSINESS CONCERNS AS MARKETING. SEQUENTIAL LEARNING EXPERIENCES WERE DESIGNED TO INCREASE UNDERSTANDING OF PRINCIPLES AND THEIR APPLICATION. THE INVESTIGATION SOUGHT TO DETERMINE THE ACHIEVEMENT OF STATED EDUCATIONAL OBJECTIVES, IDENTIFY SELECTED PARTICIPANT CHARACTERISTICS (AGE, OCCUPATION, SIZE OF FARM, SIZE OF FARMING INCOME, EDUCATIONAL BACKGROUND AND EXPERIENCES, SOURCE OF CONTACT, AND REASONS FOR ENROLLMENT), AND ASSESS KNOWLEDGE AND UNDERSTANDING GAINED BY 376 PARTICIPANTS. PRETESTS AND POSTTESTS WERE GIVEN. THE "IN-DEPTH" SCHOOLS WERE JUDGED SUCCESSFUL, A DEEPER UNDERSTANDING OF CONCEPTS WAS ACHIEVED BY PARTICIPANTS, AND THE TARGET AUDIENCE WAS REACHED. THE DOCUMENT INCLUDES SEVEN TABLES. (LY)

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ANALYSIS OF "IN-DEPTH" SCHOOLS CONDUCTED BY AREA EXTENSION AGENTS

by
Robert W. McCormick 1/

May, 1966

Introduction

The Ohio Cooperative Extension Service created eight Area Extension Centers in Ohio effective January 1, 1965. These Centers were staffed with Area Extension Agents who possessed selected specialized competencies. The move to Area Extension Centers represented a substantial commitment of resources aimed primarily at the commercial agricultural industry segment of the Ohio economy. The focus upon the total agricultural industry was intended to deal with educational problems that included agricultural production but also included programs dealing with marketing and other agri-business concerns. 2/

During 1965, an intensive effort was devoted to the establishment of organizational goals which set forth the specific economic increases to be achieved in the agricultural economy as a result of the educational efforts of the Ohio Cooperative Extension Service. 3/

Development of Area "In-Depth" Schools

As one of the major educational thrusts of the agents in the Area Extension Centers to achieve the organizational goals, area-wide "in-depth" schools were planned and conducted during the fall and winter of 1965-66. The development of these "in-depth" schools involved the invention and design of an innovation in Ohio Extension programming. 4/

1/ Leader, Extension Studies and Evaluation, Ohio [illegible]ve Extension Service.

2/ Robert W. McCormick, "An Exploratory Analysis of [illegible] Area Extension Center Approach Six Months After Establishment," mimeograph, Ohio [illegible]sion, Oct. 1965.

3/ E. L. Kirby and O. L. [illegible], "Five Year Goals for Ohio Cooperative Extension Service," mimeograph, [illegible]rative Extension Service, Dec. 8, 1965.

4/ Matthew B. Miles, In[illegible]tion, (New York: Bureau of Publications, Teachers College, Col[illegible] University, 1964), p. 16.

In-depth teaching was defined as the development of educational experiences based upon specific teaching objectives in a clearly defined content area. Further, this educational innovation implied a series of sequential learning experiences with the same audience extending over a period of time with each subsequent experience "building upon" the learning achieved by the participants in the previous setting. This approach was dedicated to the increased understanding of central concepts or principles in a specialized content area and the application of these principles to "life" situations rather than a "how to do it" or "quick answer" meeting. 5/

The "in-depth" schools were planned under the leadership of the appropriate Area Extension Agent but included counsel with appropriate Supervisors, state specialists, and county Extension agents. Clear-cut educational objectives were established and the specific participant group was identified. These schools were intended to meet specific specialized educational needs rather than to be a "shot gun" or "cafeteria" approach to education.

Objectives of the Investigation

The objectives which guided this investigation were:

1. To determine the degree to which the stated educational objectives for the area "in-depth" schools were achieved.

2. To identify selected characteristics of the participants in the area "in-depth" schools.

3. To determine the increase in knowledge and understanding of the subject matter presented in the area schools by the participants.

5/ Ralph W. Tyler, Basic Principles of Curriculum and Instruction. (Chicago: University of Chicago Press, 1950), pp. 41 - 53.

Method of Investigation

The methodology used in this study clearly could be categorized in the "investigation" class rather than as experimental research. This is to say that the methodology lacked both internal and external validity. However, as Guba points out if we use these findings as suggestive rather than conclusive, heuristic rather than definitive, there is much to be learned from this type of inquiry. 6/ As a clear signal of caveat emptor, let it be known that the findings of this investigation should not be generalized to other states or to other situations. However, taken within the Ohio Extension Service, these findings should prove useful.

Five area "in-depth" schools were selected for intensive investigation. These schools were not selected randomly but were selected for geographic representation, and representation of different areas of subject matter. The schools studied were:

Agri-business School	Washington C. H. Area
Tax Management School	Washington C. H. Area
Use of Capital on the Farm	Fremont Area
Swine Health Reproduction and Nutrition	Washington C. H. Area
Dairy Marketing	Wooster Area

The investigator reviewed the objectives for these schools carefully with the Area Agent responsible for the school. In all cases the objectives were clarified so that a realistic evaluation of the educational efforts could be made. In addition, the proposed procedures to be used were reviewed with appropriate subject matter specialists.

6/ Egon G. Guba, "Experiments, Studies, Surveys and Investigations," Educational Research: New Perspectives, ed. Jack A. Culbertson and Stephen P. Heneley (Danville, Illinois: The Interstate Printers and Publishers, Inc., 1963), pp. 242-245.

A standard form was prepared for completion by all participants in these schools to obtain background information and characteristics of the participants.

Specific "knowledge-understanding tests" were developed for each subject matter school. These "tests" were developed for content by the Area Extension Agent working with appropriate subject matter specialists. The wording and form of these "tests" were revised and modified in cooperation with this investigator. The "tests" were disguised to some extent by referring to these forms as "reaction sheets" and the use of agree and disagree questions and multiple choice questions. These tests were administered as a pre-test at the start of the first session and as a post-test at the close of the final session. The same content questions were used on both the pre- and post-test.

General reactions to the Area "in-depth" schools were obtained from the participants in terms of the degree of help participants obtained from the schools. In addition, suggestions were obtained from the participants for subject matter problem areas they felt should be included in future "in-depth" schools.

Background and Characteristics of the Participants

A total of 376 participants were enrolled in these five schools. This was an average of 75.2 participants enrolled in these schools. Enrollment ranged from 110 to 49 participants.

Occupation

The following shows the distribution of participants by occupation:

Full-Time Farmers	62.2%
Agricultural Industry	25.7%
Part-Time Farmers	9.1%
Other	3.0%

It should be pointed out that four of the five schools were directed primarily toward the full time commercial farmer and one school was directed primarily toward personnel engaged in the non-production aspects of the agricultural industry.

Formal Education

The following shows the percentage of the participants who had attained the categories of formal education listed.

High School graduate	52.3%
College graduate	19.0%
Some College	16.0%
Some high school	6.6%
More than B.Sc. degree	3.8%
Eight years or less	2.3%

It is quite clear from the foregoing data that the participants in the area schools had attained a higher formal educational level than the typical perticipant in county Extension programs. In fact, since 39% of the participants had achieved some college training, this suggests that the level of education of participants approached or surpassed the level of education of the county Extension leadership groups. Jenkins reported that the mean years of formal education of the members of County Resource Development Committees was 13.6 years 7/. It should be pointed out that over 90% of the participants had completed at least a high school education.

These data suggest that the level of instruction for area schools should be conducted at a fairly sophisticated level and that this type of education can be

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7/ David, Jenkins, "The Ohio Cooperative Extension Service As Perceived by Resource Development Committee Representatives," unpublished Ph.D. dissertation, The Ohio State University, 1964.

considered at least at the post high school level and probably should be presented at the college level. This does not necessarily suggest that the same kind of teaching-learning situations should be employed which are employed in undergraduate education, since the participants were, in fact, employed adults.

Age

The average age of the participants was 44 years. However the extremes in age ranged from less than 20 to over 65 years of age.

Prior Educational Experiences in Agriculture

The following information shows the percentage of the participants who had participated in the previous educational experiences listed:

Participated in organized Extension educational activities	72.0%
Attended OARD Field Days	59.0%
4-H Club Work	54.7%
Attended Farm Science Review	43.6%
High school vocational agriculture	40.5%
Attended a College of Agriculture	23.9%
Attended a College of Agriculture short course	7.5%

The data shown above indicate that the majority of participants in the area schools were drawn from the current clientele of the Ohio Cooperative Extension Service, the Ohio Agricultural Research and Development Center and the College of Agriculture and Home Economics. However, these data also indicate that approximately 30 percent of the participants had not been reached within the last three years though established, organized educational activities of the College of Agriculture and Home Economics and its ancillary units.

Nature of Cooperative Extension Service Contact

The following data indicate the nature of the contacts participants had had with the County Extension Agents during the three years preceding their participation in the Area schools. The percentage of the participants indicating each kind of Extension contact is also shown.

Office call at Extension office	82.4%
Called the Extension office by phone	69.1%
County agent visited farm or business	46.6%
Served on an Extension program planning committee (excluding County Advisory Committee)	18.6%
Served as a 4-H advisor	16.6%
Served on the County Extension Advisory Comm.	10.7%
No contact with County Extension Agents	5.5%
Served on State Extension Advisory Committee	1.3%

The data shown above clearly point out that the participants in the area schools were a part of what could be described in a generic way as "Extension's Clientele" prior to the establishment of Area Extension Centers and the conduct of the schools. Only five percent of the participants indicated they had had no contact with county Extension agents during the past three years.

Keeping in mind that as previously reported 72% of the participants had attended organized Extension educational activities, it is interesting to note the nature of the contact the participants had with County Extension Agents.

While there was no significant difference in the number of participants calling the agent by phone and the number calling at the office ($x^2 = 1.42$, d.f. = 1, n.s.) the fact that these people were equally likely to call in person as phone seems to be an important finding. One can infer that these

participants were the kind of people who continually seek knowledge, are dedicated to the notion of continuing their education and possess what Houle calls, "an inquiring mind." 8/

It is also interesting to note that less than 20 percent of participant group had served on Extension program planning committees. These participants could not in the main be classified as what we euphemistically refer to in Extension as the "key leaders" in our Extension program.

Size of Farm

The average size of farm for full time and part time farmer participants in the area schools was 410.8 acres. This included both owned and rented acreage. The farm size ranged from less than 100 acres to over 1500 acres. It should be emphasized again that approximately 30 percent of the participants were not engaged in production agriculture.

Gross Income from Farming

The following data indicate the percentage of the participants who were engaged in production agriculture who had gross income levels from farming in the categories listed below.

Less than $10,000	11.2%
10,000 and over but less than 20,000	20.1%
20,000 and over but less than 40,000	41.6%
40,000 and over	27.1%

These data indicate that approximately 70% of the participants engaged in agricultural production were realizing $20,000 or more gross income from farming.

8/ Cyril O. Houle, The Inquiring Mind. (Madison: The University of Wisconsin Press, 1961)

Since these figures include both full and part time farmers, it is clear that these schools were attended primarily by commercial agricultural producers.

How Participants Learned of Area "In-Depth" Schools

The following data show the sources of contact about the area schools reported by the participants.

Notice from County Extension Agent	49.6%
Notice directly from Area Agent	31.1%
Newspaper, radio or T.V. announcement	13.8%
From a neighbor or friend in the county	4.7%
Other *	.7%

* These data do not include the 110 participants who were contacted for one area school by 31 different agricultural leaders in the area. The Area Agent worked with the lending agencies to obtain enrollment.

County Extension Agents were the primary contact for about 50% of the participants in these schools. It is clear that County Extension Agents accepted a responsibility to make this educational experience known to potential participants in their counties. However, a sizable number of participants were contacted directly by the Area Extension Agent. It should be pointed out that the Area Agents conducting the schools under investigation had been located in these areas one year or less at the time the schools were conducted. Thus, these Area Agents had not had a long period of time to build up personal contacts with prospective participants.

Reasons Participants Enrolled in Area Schools

The data below show the reasons participants indicated for enrolling in the area schools.

Interested in New Developments	47.6%
Interested in Basic Principles	32.3%
Interested in Hearing Resource Persons	10.8%
Curious about the New Extension Approach	7.1%
Other*	2.2%

* Data do not include the 110 participants who were contacted by the 31 different agricultural leaders in one area.

The data indicate that the prime motivation for participation in the area schools was the educational benefits to be derived from participation. These data are consistent with the previously stated propositions that essentially these participants were "continuing learners" with an inquiring mind.

Less than 10 percent of the participants indicated they participated only because they were curious about this new approach. If curiosity was the only motivation for participation by these participants one would not expect then to continue to participate over a long period of time.

Knowledge - Understanding Tests

The pre- and post-tests administered to the participants in the area schools were primarily designed to measure understanding of basic concepts in the subject matter fields. No precise statistical analysis have been made of these tests but a general analysis will be reported. Since it was not possible to check these tests for reliability or validity prior to the administration, it seems unwise to apply precise statistical tests to the results. However, these tests were reviewed with competent specialists in the field and were judged to have sufficient validity to be useful in a general way.

In general, the testing procedure indicated that there were substantive gains in the knowledge by the majority of the participants in all of the area schools. There was a distinct variation in the level of increase of knowledge among the schools, however. It appeared that where value orientations were strongly held

by the participants there was substantively less change than where the knowledge to be learned was not associated with emotionally laden attitudes. For example, questions dealing with the "farmer's share of the consumer's dollar" tended to be answered incorrectly before and after the area schools.

One of the useful features of the pre-test is the fact that the Area Agent can change his content emphasis upon finding from the pre-test that there is a relatively high or low level of understanding about certain subject matter principles.

Perhaps the most significant finding of this investigation is the fact that it is feasible to use testing procedures in an informal adult educational setting such as these area schools.

It can be asserted that giving a pre-test to participants constitutes a conditioning of the participants for learning and thus, the results on the post-test are biased. This fact is acknowledged. However, since this investigation was a study of an operational activity in the practice of Extension Education and does not purport to be an experimental study, the introduction of the tests becomes a part of the teaching procedure. If this procedure produces increased learning, then the procedure is a desirable one.

The fact that the Area Agents administered the tests to the participants should have been a factor in reducing any "Hawthorne Effect" but obviously one cannot be certain that this element was completely eliminated. In fact, substantive favorable influence from this effect may have resulted since area schools were new and perceived as an innovation. 9/

9/ Norman E. Wallen and Robert M. Travers, "Analysis and Investigation of Teaching Methods," Handbook of Research on Teaching, ed. N. L. Gage (Chicago: Rand McNally and Company, 1963, p. 473.

Participant Reactions to Schools

The participants in the area schools were enthusiastic learners. Individual comments such as, "we need more training along these lines," and "this taught me to look a little deeper at the art of borrowing money" were typical responses from the participants. The participants rated the schools as "very helpful" to them on the evaluation forms. In addition, participants suggested additional subject matter areas in which they hoped the Area Agents would conduct "in-depth" schools.

Personnel Engaged in Direct Teaching

A careful analysis of the procedures used and the personnel engaged in the area schools indicates that the Area Extension Agents were responsible for about fifty percent of the direct teaching. In view of the stated functions and responsibility of the Area Agent these data would suggest that a rather substantive amount of the direct teaching was conducted by State Extension Specialists, resident instructors, research workers or by outside experts. This situation no doubt resulted from the fact that these were the first area "in-depth" schools conducted. One might reasonably expect more of the direct teaching to be conducted by Area Agents in the future.

Conclusions

The following conclusions are drawn from this analysis of the area schools.

1. Measured against the stated objectives, these schools must be considered as having been very successful.

2. A deeper understanding by the participants of the concepts presented was achieved through these schools.

3. The "target audience" was reached through the schools.

4. Commercial farmers constituted the primary participant group involved in these schools.

5. Participants in the schools constituted a rather sophisticated group as measured by level of formal education.

6. Participants were not primarily those people who occupied "leadership positions" in county Extension programs.

7. Participants were drawn primarily from clientele who were currently participants in county Extension programs and activities of the Ohio Agricultural Research and Development Center and the College of Agriculture and Home Economics.

8. Participants were recruited for the schools by contacts from county and area Extension agents.

9. Participants could be characterized as highly motivated continuing learners.

10. Participants engaged in production agriculture were clearly commercial producers as indicated by size of farm and gross farm income.

11. Participants were largely interested in the subject matter content on the basis of immediate application rather than solely to understand principles.

12. Participants were very enthusiastic about the area schools.

13. Much of the direct teaching in the schools was conducted by personnel other than the Area Extension Agent.

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Suggestions

1. In view of the expressed intent of Area Extension [illegible] consideration should be given to the involvement of personnel from the agricultural industry who are <u>not</u> engaged in production agriculture.

2. Area Extension Agents may need to be encouraged to do more of the direct teaching in view of their specialized knowledge in the field.

3. County Extension Agents may need to assume more of the "enrollment procurement" and perhaps more of the arrangements for the area schools.